

19<sup>th</sup> Nov 2021

#### ITL/TVM/FAC/SEZ/038/2021

The Director – IA, III. Room No. 524, 5th Floor, The Ministry of Environment & Forest (MOEF), Paryavaran Bhavan, C.G.O Complex, Lodhi Road, New Delhi – 110 033

Dear Sir,

<u>Sub: Six monthly post ECC - Operation and construction phase monitoring report for the period of April-2021 to September-2021 of Software Development IT Park (SEZ) at Attippra Village. Trivandrum District.</u>

Reference: ECC No: 647/SEIAA/EC1/4943/2013 dated 16.02.2016

With reference to the above, please find enclosed the copy of the report submitted to SEIAA Trivandrum on 19<sup>th</sup> Nov 2021 for the project with relevant annexures.

Thanking You, Yours Faithfully

Devi Padinanabhan Nair Regional Manager – Facilities

## Enclosures:

- 1. Copy of the letter submitted to SIEAA.
- 2. Reports -

Annexure-1: STP outlet sample analysis report Annexure-2: UGR Out sample analysis report Annexure-3: Ambient air quality report Annexure-4: DG Stack emission report Annexure-5: Noise level monitoring report Annexure-6: Solar Power generated details

#### **INFOSYS LIMITED**

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#### ITL/TVM/FAC/SEZ/037/2021

19<sup>th</sup> Nov 2021

The Administrator, State Environment Impact Assessment Authority (SEIAA), K.S.R.T.C Bus Terminal Complex, 4th Floor, Thampanoor, Thiruvananthapuram - 695 001

Dear Sir,

<u>Sub: Six monthly post ECC - Operation and construction phase monitoring report for the period of April-2021 to September-2021 of Software Development IT Park (SEZ) at Attippra Village. Trivandrum District.</u>

## Reference: ECC No: 647/SEIAA/EC1/4943/2013 dated 16.02.2016

Please find enclosed Six months' report for the project with relevant annexures.

Thanking You, Yours faithfully Devi Padmanabhan Nair Regional Manager – Facilities

## Enclosures:

1. Reports -

Annexure-1: STP outlet sample analysis report Annexure-2: UGR Out sample analysis report Annexure-3: Ambient air quality report Annexure-4: DG Stack emission report Annexure-5: Noise level monitoring report Annexure-6: Solar Power generated details



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# MOEF report for Construction Phase & Operation Phase (SEZ) Apr'21 to Sep'21.

SI No.	Conditions Imposed	Compliance taken by us		
	1	Water		
1.	Water requirement & sources	Water is sourced throug	Water is sourced through Technopark which is treated and stored in Underground	
			Sewage water is treated at the STP with	
2.	RWH units	Ũ	vater, 2 ponds have been created with	. ,
			mpus with proper side pitching and de	
3.	Facilities for liquid waste treatment		e campus is treated through Sewage Tr	. ,
			s based on Membrane Bio Reactor Tec	
		_	tment plant will be utilized for Irrigatic	
		STP Outlet Report detail	quality confirms to KSPCB prescribed	standard (Annexure 1).
		Parameter	Stipulated Limit	Results
		Ph	6.5 to 8.5	7.69
		TSS in MG/L	20 mg/l	BDL
		Oil and Grease	1 mg/l	BDL
		BOD in mg/l	3 mg/l	2.2 mg/l
		E-Coli	NIL	<2
		Residual Chlorine	1.0 mg/l	BDL mg/l
		COD in mg/l	20 mg/l	08 mg/l
		TDS in mg/l	Nil	347 mg/l
		Total Nitrogen	Not more than 10 mg/l	5.02 mg/l
		Ammonia	Not more than 5 mg/l	0.56 mg/l
5. 6.	Water quality meeting requirements Provisions for use of recycled water	<ul> <li>Monthly monitoring is carried out through a MOEF approved external agency to ensure that the water quality meets IS 10500 requirement and reports attached for the last 6 months (Apr'21 to Sep'21) and maintained at site. (Annexure 2).</li> <li>Recycled water from STP is utilized for irrigation, flushing and cooling requirements</li> </ul>		
		within the campus.		
		LAND		
7.	Access road to the site –Width &	Main Access road to the	site is through NH-66 by-pass and serv	vice road available for easy
	Condition	entry to the site.	с , , ,	,
		For safety movement of	the pedestrians and vehicles, crash ba	rriers and traffic signals
			vice road and at the NH Sides	
8.	Storage of explosives/hazardous		res have been taken and also obtained	
	substances	Petroleum and Explosives Safety Organization (PESO) for storage of HSD valid till 31 <sup>st</sup> Dec		
0	Locility for colid worth management	2030.	art of colid waste management cogreg	vation is achieved at source
9.	Facility for solid waste management.		art of solid waste management, segreg , color coded bins and the same is stor	
			te generated is fed in to 350kg capacity	
		within the campus.		
			vg quantity (Apr'21 to Sep'21)	
			35.07kg/month	
10.	Proneness to natural hazards		rds Seismic Zoning Map, the campus a	irea comes under Zone –
		III, moderate damage risk zone.		
		Scheduled Mock drills are conducted so as to make the employees aware on what to do		
			1	
			. Safe Assembly point identified to acc place in case of an emergency.	

11.	Topsoil, overburden etc.	The topsoil is used for landscapin Overburden is used for back fillin,	-	ion purposes inside	e campus itself.
		AIR			
		Dust emission from construction phase	Provision of wind b barrication for con Monthly monitorir campus, and repor (Apr'21 to Sep'21)	trolling dust is prov g of ambient air is ts attached for last	vided. done across the
12.	Air quality meeting requirements	Emissions from combustion of fossil fuels	There is no major a except DG sets and construction and o It is ensured that t materials is done o DG's are used as b Grid power failure height is provided measures. Monthly done by an MOEF reports attached fo and report maintai Stack Monitoring Re	d vehicular moveme peration phase. ransportation of co only during non-pea ackup power gener Appropriate stacks for DG's as Air pollu y monitoring of stac approved third part or last 6 months (Ap ned. (Annexure 4).	ent during nstruction k hours. ation in case of s with stipulated ution control ck emission is cy Vendor and or'21 to Sep'21)
			Parameter	Stipulated Limit	Results
			Particulate Matter	75mg/ Nm <sup>3</sup>	65.77 mg/ Nm <sup>3</sup>
			Sulphur Dioxide	Nil	37.24 mg/ Nm <sup>3</sup>
			Oxides of Nitrogen as NO2	710 ppmv	50.92 ppmv
			Carbon Monoxide	150 mg/ Nm <sup>3</sup>	105 mg/Nm <sup>3</sup>
			Non-methane Hydrocarbon	100 mg/ Nm <sup>3</sup>	4.78 mg/ Nm <sup>3</sup>
13.	Noise level meeting requirements	<ul> <li>During Construction Phase: There will be some noise generated due to cutting of marble and other stone materials</li> <li>Uninterrupted movement of heavy and light vehicles at high speeds may cause increase in ambient noise levels on the project road (No significant impacts)</li> </ul>	the opera thereby d pollution. Personal I > It is ensur are used f materials noise leve limit of 20 keep a ch Transport > Monthly a and repor	<ul> <li>Marble and Tiles are located far away from the operational phase, ie at designated area thereby decreasing the effect of noise pollution. Workers are equipped with Personal Protective equipment's (PPE's).</li> <li>It is ensured that good, conditioned vehicles are used for transporting construction materials thereby resulting in decrease of noise levels, also strictly following the speed limit of 20km/hr and securities posted to keep a check on vehicle speeding. Transportation is during non-peak hours.</li> </ul>	
14.	Likely emissions effecting environment	(Apr 21 to Sep 21). (Annexure 5). There is no major air pollutant generating source. DG's are used as backup power generation in case of Grid power failure. Appropriate stacks with stipulated height is provided for DG's as Air pollution control measures. Monthly monitoring of stack emission is done and reports attached for last 6 months (Apr'21 to Sep'21) and report maintained. (Annexure 4).		up power ed height is of stack	

15.	Hazardous waste generation and	Hazardous wastes generated are collected, stored and disposed through CPCB & KSPCB
	management	authorized vendors. A designated Scrap Yard available inside campus for storing the
		Hazardous and Non-Hazardous waste generated.

		ENEGRY
16.	Energy requirement & source	Source of Power supplied to the campus is through Technopark. DG has been installed which is used as backup power generation in case of Grid power failure. Average Power consumption for (Apr'21 to Sep'21) is 363,833 kwh/month i.e., 3 % reduction compared to the period, Oct'20 to Mar'21.
17.	Extent of usage of alternative energy resources	<ul> <li>Grid connected Solar panels of 826kwp has been installed which caters to 29% of total campus power consumption for the period of (Apr'21 to Sep'21)</li> <li>Monthly Power generation from solar power has been attached. (Annexure 6). Average Solar power generated for (Apr'21 to Sep'21) is 105205kwh/month.</li> <li>In addition to this, Solar power generated on weekends and public holidays are exported to Technopark.</li> </ul>
		BIODIVERSITY
18.	Presence of any endangered species or red listed category	Unique initiative towards safeguarding <b>Rare Endangered and Threatened (RET) species</b> of native plants / trees and medicinal plants is taken up. A dedicated area of approx. 1.5 acres is planted with RET species and medicinal plants also.
		RET Trees/Saplings
		Hopea parviflora
		Vateria indica
		Aphanamixis polystachya
		Alstonia scholaris
		Calophyllum Inophyllum
		Pterocarpus santalinus
		Caryota urens
		Saraca asoca
		Terminalia bellirica
		Garcinia talboti
		Dipspyros buxifolia
		Artocarpus lakoocha
		hydnocarpus pentandra
		Barringtonia racemosa
		Terminalia arjuna
		Butea monosperma
		Dispyros pentandra
		Medicinal Plants
		Mussaenda glabrata
		Strobulanthus heiniyanus
		Piper longum
		Ocimum tenuiflorum
		Plumbago zeylanica
		Woodfordia fruticosa
		Selaginella bryopteris

		Chamaecostus cuspidatus	
		Gymnema sylvestre	
		Stevia rebaudiana	
		Aloe vera	
		Piper nigrum	
		Asparagus officinalis	
		Justicia adhatoda	
		Ocimum tenuiflorum	
		Ensete superbum	
		Ocimum tenuiflorum	
		Hemigraphis colorata	
		Piper betle	
		Aegle marmelos	
		Lawsonia inermis	
		Chrysopogon zizanioides	
		Hibiscus	
		Michelia chempaka	
19.	Loss of native species and genetic diversity	As a responsible corporate large number of saplings of native fruit species like Mangosteen, Ramaphal, Seethaphal, Malasyian Jamba, Water apple, Jaathi, Anjali, Badam, Bird's cherry, Coconut tree, Fig, Kodam puli, Banana, Agasthya, Tamarind, Carambola, Pulinchikka, Jamun, Mosambi, Mangoes, Pomegranete, Amla, Sapotta, Guava, Jack fruit, Soursop and Ramboottan Native trees such as Rain tree, Elanji, Gulmohar, Banyan tree, Cassia, Areca nut, Neem, Mani marathu and Chembakam are planted and shrubs like Hibiscus, ixora, lantana, Wi jasmine, Rose, Neela koduveli, Krishna Neelam, Rangoon creeper, Phyllanthus, Kilukki, Plumeria, Bougainvilla, Nerium, Parijathakam, Jasmine, Teccoma, Kanakambaram etc	
20.	Likely displacement of fauna	are planted inside campus so as to conserve the biodiversity. Not Applicable.	
21.	Any introduction of alien/ invasive species	Nil.	

	SOCIAL ASPECTS			
22. Proximity to nearest habitation Campus is located within Trivandrum Corporation limits surrounded by UST, NH By and Residential houses.		Campus is located within Trivandrum Corporation limits surrounded by UST, NH Bypass and Residential houses.		
23.	CSR Activities	<ul> <li>125 Oxygen concentrators were donated to Angamaly Taluk Hospital.</li> <li>Oxygen plant of 500 LPM capacity was installed at Trivandrum General Hospital</li> <li>Ventilators, ICU beds and Multiparameter monitors were donated to Medical college Trivandrum and General Hospital Kochi</li> <li>Covid Relief Fund - Sanjeevani conducted 19 grocery donation drives in 12 locations within the districts of Kerala. The donation materials included grocery kits, daily essentials, sanitary napkins, etc.</li> <li>The health care essentials donation drive presented the much-needed medical supplies to hospitals across the state, thus impacting more than 27,000 individuals. The materials included, disposable sheets, face masks, adult diapers, and adult masks.</li> <li>33 smartphones were distributed to students to help facilitate online learning.</li> <li>A total of 5 notebook donation events in which 496 students were given notebooks were conducted by the track to students.</li> </ul>		

24.	Environment Management plan/ Eco restoration plan (brief details)	<ul> <li>Sattva sponsored Onasadhya to beneficiaries of orphanages and nursing homes across Kerala and institutions in the neighboring state of Tamil Nadu. A total of 37 organizations were benefitted from this program.</li> <li>Grocery &amp; Essentials Donations done at 15 different locations which benefitted around 509 families</li> <li>Vijnana Team of the academic track has provided more than 120 online sessions to students in the region. The regular weekend classes focused on subjects ranging from math to history. Quiz events, Onam celebrations and talent day competitions were conducted among the students.</li> <li>As part of Environment management, the following measures have been taken:</li> <li>Conducting environmental quality monitoring for emissions and effluents as per the PCB standards through MOEF authorized vendor</li> <li>Awareness mailers in environment protection and effective waste management circulated to employees on periodic basis</li> <li>As part of World Environment Day 2021, GrassRoutes group circulated #WorldEnvironmentDay2021 #GenerationRestoration #PlantATree challenges to all the employees</li> <li>Rolled out Surveys to employees on fighting against Climate change while working from home</li> <li>Waste segregation done at source by implementing color coding for different types of waste</li> <li>Hazardous waste segregated and stored in designated areas and disposed of through authorized vendors</li> <li>Usage of green sealed chemicals for housekeeping purpose</li> <li>Conducted online sessions on aquaponics, roof top farming and fish farming to enhance awareness of agriculture during working from home</li> <li>Implemented collection of Covid 19 related wastes such as masks and gloves in exclusive waste bins to ensure safe handling</li> <li>Sewage generated in the campus is treated through Sewage Treatment Plant (STP) which is based on Membrane Bio Reactor Technology (MBR).</li> <li>As a responsible corporate, we have increased the</li></ul>
25.	Biomedical waste management	used for cooking purposeBio-medical waste generated within the campus is disposed through IMAGE. Color coded bins are placed inside Med center with markings for proper segregation at source.A software application "IMAGE HCE PORTAL 1.0" has been implemented for tracking the end disposal of Biomedical waste.Abiding by the Biomedical waste rule, used masks and gloves are separated from the 
		Bio Medical Waste Avg (Apr'21 to Sep'21)
		29.23kg/month
26.	E-waste management	E-wastes generated are collected, stored and disposed through CPCB & KSPCB authorized vendors. Details on the disposal is been submitted to SPCB through Form 3 annually.
27.	Litigation, if any, against the project	No.

## SPECIFIC CONDITIONS: -

<u>Sl. No.</u>	Conditions	
1.	The Emergency parking facility proposed should be ear marked.	Complied, it is ear marked. In every floor of Multi level parking lot (MLPL) a designated emergency parking space is identified, and ear marked.
2.	Adequate drinking water and sanitary facilities should be provided for construction workers at the site. Provision should be made for mobile toilets. The safe disposal of wastewater and solid wastes generated during the construction phase should be ensured.	Drinking water facilities are provided at construction site. Sanitary facilities are also provided and are connected to the STP.
3.	Disposal of muck during construction phase should not create any adverse effect on the neighboring communities and be disposed taking the necessary precautions for general safety and health aspects of people, only in approved sites with the approval of competent authority.	The muck will be used for refilling the low-lying areas in the project premises. Used for the development of internal roads.
4.	Construction spoils, including bituminous material and other hazardous materials, must not be allowed to contaminate water courses and the sump sites for such materials must be secured so that they should not leach into the ground water.	Construction spoils and hazardous materials generated are stored in a safe and secured manner. The placement is on concrete base thereby eliminating any chance of contamination to the water courses.
5.	Any hazardous waste generated during construction phase, should be disposed of as per applicable rules and norms with necessary approvals of Kerala State Pollution Control Board.	Complied, disposed off as per applicable KSPCB rules and norms received.
6.	The diesel generator sets to be used during construction phase should be low Sulphur diesel type and should conform to Environment (Protection) rules prescribed for air and noise emission standards.	DG's are used as backup power generation in case of Grid power failure. DG's are located in secluded areas with appropriate acoustic enclosure and stack
7.	Water demand during construction should be reduced by use of pre-mixed concrete, curing agents and other best practices referred.	Complied, pre-mixed concrete is used.
8.	Roof should meet prescriptive requirement as per Energy Conservation Building Code by using appropriate thermal insulation material to fulfil requirement.	Complied, Energy Conservation Building Code is followed.

Sl. No.	Conditions	
(i)	Rain water Harvesting capacity should be installed as per the prevailing provisions of KMBR/ KPMR, unless otherwise specified elsewhere.	2 ponds have been created with a total capacity of 36118cum inside the campus with proper side pitching and desilting towards collecting rainwater. Open drains are also created along the rear periphery wall towards collecting the run-off water from the neighborhood.
(ii)	Environment Monitoring Cell as agreed under the affidavit filed by the proponent should be formed and made functional.	Yes, formed and functional.
(iii)	Suitable avenue trees should be planted along either side of the tarred road and open parking areas, if any, inclusive of approach road and internal roads.	Trees such as Water apple, Fig, Jamun, Mango, Badam and Amla are the avenue tree cum fruit trees and trees like Raintree, Gulmohar, Spathodia, Elanji, Ficus, Japanese Fern, Wild Neem, Kadamba, Ezhilampala, Bauhunia, Cardia, Terminalia, Golden shower, Bird's cherry and Calophyllum are grown along the roads and pathways for shade. Shade trees has been provided along the NH service road like Mimusops elengi and Ficus benjamina with flowering plants like Ixora, Wild Jasmine, Lantana, Tecooma, Nikotia, Nerium, Caesalpinia and Ficus panda are planted in the service roads and median outside campus for public environmental welfare.
(i∨)	The project shall incorporate devices for solar energy generation and utilization to the maximum possible extent with the possibility of contributing the same to the national grid in future.	Grid connected Solar panels of 826kwp has been installed which caters to 29% of total campus power consumption. Solar power generated on weekends and public holidays are exported to Technopark.
(v)	Safety measures should be implemented as per the Fire and Safety Regulations.	Complied, safety measures are implemented as directed by Department of Fire & Rescue services. Annual Renewal of the Fire NOC certificate is carried out by FRS after necessary site inspections. All buildings are equipped with Sprinkler systems, hose reels, wet risers, smoke & fire alarm system. External fire hydrants provided around the buildings across the campus. Exclusive fire tanks maintained atop all the high-rise buildings in addition to the fire tanks available in our Underground reservoirs. Fire extinguishers are provided as per IS 2190 standard and sand buckets are provided at prominent places.
(vi)	STP should be installed and made functional as per KSPCB guidelines including that for solid waste management	Complied, Sewage generated in the campus is treated in the Sewage Treatment Plant (STP) of capacity 500KLD. The STP is based on Membrane Bio Reactor (MBR) technology. Recycled water from Sewage treatment plant will be utilized for landscaping, flushing and cooling tower purpose. Treated water quality confirms to KSPCB required standard. Proper facilities are provided inside campus for solid waste management. The food waste generated is fed in to 350kg capacity digester biogas plant biogas. The dry waste generated is disposed through authorized dealer. Adequate number of collection bins are provided for bio- degradable waste. Have also ensured that the solid waste generated is segregated at source.
(vii)	The conditions specified in the Companies Act, 2013 should be observed for Corporate Social Responsibility.	Complied.

(∨iii)	The proponent should plant trees at least 5 times of the loss that has been occurred while clearing the land for the project.	Complied, saplings comprising of native fruit species and shrubs has been planted inside campus, to conserve the biodiversity.
(ix)	Consent from Kerala State Pollution Control Board under Water and Air Act(s) should be obtained before initiating activity.	Complied, Consent obtained.
(x)	All other statutory clearances should be obtained, as applicable, by project proponents from the respective competent authorities including that for blasting and storage of explosives.	Complied. Possessing valid license from Petroleum and Explosives Safety Organization (PESO) for storage of HSD valid till 31 <sup>st</sup> Dec 2030.
(xi)	In the case of any change(s) in the scope of the project, the project would require a fresh appraisal by this Authority.	No change in the Scope of the proposed project.
(xii)	The Authority reserves the right to add additional safeguard measures subsequently, if found necessary, and to take action including revoking of the environment clearance under the provisions of the Environment (Protection) Act, 1986, to ensure effective implementation of the suggested safeguard measures in a time bound and satisfactory manner.	Yes, agreed.
(xiii)	The stipulations by Statutory Authorities under different Acts and Notification should be complied with, including the provisions of Water (Prevention and Control of Pollution) Act, 1974, the Air (Prevention and control of Pollution) act 1981, the Environment (Protection) Act, 1986, the Public Liability (Insurance) Act, 1991 and EIA Notification, 2006.	Complied.
(xiv)	The proponent shall submit half yearly reports on the status of compliance of the stipulated EC conditions including results of monitored data (both in hard copies as well as by e-mail). It shall simultaneously be sent to the respective Regional Office of MoEF, Govt.of the India and also to the Directorate of Environment and Climate Change, Govt. of Kerala.	Half yearly report submitted to Regional Office of MOEF and to Directorate of Environment and Climate change, Govt of Kerala.
(xv)	The details of Environmental Clearance should be prominently displayed in a metallic board of 3 ft. x 3 ft. with green background and yellow letters of Times New Roman font of size of not less than 40.	Complied, the details of EC are prominently displayed.